

What is claimed is:

- 5 1. A buffer layer of a light emitting semiconductor device, wherein the light emitting semiconductor device includes a substrate, said buffer layer disposed on the substrate, an light emitting semiconductor layer, and electrodes for inputting voltage, said buffer layer comprising:
 a metal layer formed on said substrate; and
 a metallic nitride layer, which is formed on said metal layer by transforming part of said metal layer into metallic nitride layer.
- 10 2. The buffer layer as claimed in claim 1, wherein said substrate is made of material selected from the group of sapphire, SiC, silicon, GaAs, InP, AlN, GaP, GaN, and ZnSe.
- 15 3. The buffer layer as claimed in claim 1, wherein said metal layer is an Indium (In) layer.
4. The buffer layer as claimed in claim 3, wherein said metallic nitride layer is an InN layer.
5. The buffer layer as claimed in claim 1, wherein said metal layer is an aluminum layer.
6. The buffer layer as claimed in claim 5, wherein said metallic nitride layer is an AlN layer.
- 20 7. The buffer layer as claimed in claim 1, wherein said metal layer is a boron layer.
8. The buffer layer as claimed in claim 1, wherein said metallic nitride layer is a BN layer.
- 25 9. The buffer layer as claimed in claim 1, wherein said metal layer is a gallium layer.
10. The buffer layer as claimed in claim 1, wherein said metallic nitride layer is a GaN layer.

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11. A method for manufacturing a buffer layer of a light emitting semiconductor device, comprising the steps of:
- providing a substrate;
- forming a metal layer on said substrate by supplying an organic metal gas; and
- forming a metallic nitride layer by supplying a nitride gas to react with part of said metal layer.
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12. The method as claimed in claim 11, wherein said substrate is made of material selected from the group of sapphire, SiC, silicon, GaAs, InP, AlN, GaP, GaN, and ZnSe.
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13. The method as claimed in claim 11, wherein said metal layer is an Indium (In) layer.
14. The buffer layer as claimed in claim 13, wherein said metallic nitride layer is an InN layer.
15. The buffer layer as claimed in claim 11, wherein said metal layer is an aluminum layer.
16. The buffer layer as claimed in claim 15, wherein said metallic nitride layer is an AlN layer.
17. The buffer layer as claimed in claim 11, wherein said metal layer is a boron layer.
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18. The buffer layer as claimed in claim 17, wherein said metallic nitride layer is a BN layer.
19. The buffer layer as claimed in claim 11, wherein said metal layer is a gallium layer.
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20. The buffer layer as claimed in claim 19, wherein said metallic nitride layer is a GaN layer.
21. A method for manufacturing a buffer layer of a light emitting semiconductor

device, comprising the steps of:

providing a substrate;

forming a metal layer on said substrate by supplying a metal gas; and

form a metallic nitride layer by supplying a nitride gas to react with said
5 metal layer.

22. The method as claimed in claim 21, wherein said substrate is made of material selected from the group of sapphire, SiC, silicon, GaAs, InP, AlN, GaP, GaN, and ZnSe.
- 10 23. The method as claimed in claim 21, wherein said metal layer is an Indium (In) layer.
24. The buffer layer as claimed in claim 23, wherein said metallic nitride layer is an InN layer.
25. The buffer layer as claimed in claim 21, wherein said metal layer is an aluminum layer.
- 15 26. The buffer layer as claimed in claim 25, wherein said metallic nitride layer is an AlN layer.
27. The buffer layer as claimed in claim 21, wherein said metal layer is a boron layer.
28. The buffer layer as claimed in claim 27, wherein said metallic nitride layer is
20 a BN layer.
29. The buffer layer as claimed in claim 21, wherein said metal layer is a gallium layer.
30. The buffer layer as claimed in claim 29, wherein said metallic nitride layer is a GaN layer.
- 25 31. A buffer layer of a light emitting semiconductor device, wherein the light emitting semiconductor device includes a substrate, said buffer layer disposed on the substrate, an light emitting semiconductor layer, and

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electrodes for inputting voltage, said buffer layer is manufactured by the method claimed in claim 11.

32. A buffer layer of a light emitting semiconductor device, wherein the light emitting semiconductor device includes a substrate, said buffer layer disposed on the substrate, an light emitting semiconductor layer, and electrodes for inputting voltage, said buffer layer is manufactured by the method claimed in claim 21.
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